



MC9090-Z RFID

Handheld RFID Reader

EMPOWER MOBILE WORKERS WITH REAL-TIME COMPREHENSIVE ADVANCED DATA CAPTURE CAPABILITIES IN A RUGGED HANDHELD COMPUTER

Streamline your business operations, reduce errors, and increase your productivity and profitability with the power of the MC9090-Z RFID Handhelds from Motorola. The device provides mobile workers throughout the supply chain with complete data capture functionality and real-time connectivity to critical business applications. Workers can read RFID tags, and capture 1D, 1D at extended ranges and 2D bar codes as well as images, ensuring seamless integration throughout the enterprise. Handheld, on-the-spot RFID capabilities remove the dependency on fixed readers installed at typical choke points, enabling efficient exception handling, pricing audits and changes, stock picking and more.

The MC9090-Z is designed to withstand rigorous use in extreme environments and a wide variety of working conditions, providing the flexibility to be used on the manufacturing floor, in the warehouse, on the loading dock, and out in the yard as well as in the back room or out on the sales floor of a retail operation. An anywhere, anytime wireless connection provides the real-time information needed to streamline business processes, increase productivity and enable more strategic decision-making. Support for wireless printing, wireless headsets and more via wireless PAN simplifies everyday use for end-users, while the ergonomic pistol-grip design provides comfort in scan intensive applications, such as shelf price audits and inventory management.

EASY-TO-USE ROBUST LOCATING CAPABILITY

Until now, RFID handheld readers identified the general proximity of an item — for example, a warehouse zone or shelf. With the MC9090-Z, a unique combination of intuitive audible and visual cues can quickly guide an associate to locate any desired item, which is useful in back room or stock picking situations. As the device moves closer to a specific item to be found, a beep tone increases in frequency and volume, while a sliding graphical bar increases in size.

THE POWER TO MEET YOUR ENTERPRISE APPLICATION REQUIREMENTS

Equipped with the latest advances in mobile technology, the MC9090-Z handheld provides support for the richest enterprise applications. Whether your application is simple or complex, the MC9090-Z RFID reader delivers performance you can count on — from the latest Intel processor designed for the specific demands of mobility, to robust persistent storage capabilities and multiple advanced data capture options.

The ability to read and encode RFID tags, capture images as well as scan bar codes enables enterprises to deploy a single device in many business areas, eliminating the need and associated costs for multiple devices in multi-modal data capture environments. Workers can count on ample battery life for a full shift through superior power management. And modular keypads, a rugged touch panel and a display that is easy to view inside and outside provides users with maximum readability, as well as ease-of-use and comfort.

FEATURES

Motorola RFID Reader Engine Module

For increased, high efficiency read performance

Supports 1D, 1D at extended ranges and 2D bar code scanning, RFID and imaging

Multi-modal single device provides superior application flexibility and cost-efficiencies

Exceptionally rugged construction: passes industry's most stringent drop and tumble tests; IP64 sealing rating; integrated internal antennas

Flexibility to use in nearly any environment; dramatically reduces repair and downtime costs; delivers enterprise performance and ROI

Pinpoint locating technology

A unique combination of intuitive audible and visual cues easily guides workers to a specific item: as the device moves closer to the desired item, a beep tone increases in frequency and volume, while a sliding graphical bar increases in size.

Common Motorola platform

Maximizes software development investment

Intel XScale PXA270 processor: 624 MHz; enhanced memory architecture for persistent storage

Supports simple to complex multimedia applications; ensures retention of mission-critical data

Windows Mobile 5.0 and 6.1

Advanced mobile operating system for robust application support (Windows or application-specific)

WPAN: Bluetooth v1.2 radio with BT Explorer (Manager included)

Wirelessly synchronize, print, and connect to a headset

RUGGED CONSTRUCTION AND MAXIMUM MANAGEABILITY DELIVER A LOW TCO

The MC9090-Z delivers outstanding investment protection and a low total cost of ownership through superior design, construction, manageability and support services. Adding Motorola

Mobility Services Platform (MSP) enables you to quickly and easily provision, track and support all your MC9090-Z RFID

devices from a central location, delivering an unprecedented level of simplicity and low cost to management of mobile devices. And to help protect your investment, Motorola offers Service from the Start with Comprehensive Coverage.

For more information on the MC9090-Z RFID handheld and its full line of accessories, visit our global contact directory at www.motorola.com/enterprise/contactus, or visit us on the Web at www.motorola.com/mc9090z

MARKET, APPLICATIONS AND USERS

Market	Applications	User
Manufacturing	Inventory management Supply-line replenishment	Assembly-line personnel Shipping/receiving personnel
Retail	Warehouse management Price audits/changes Store receiving Inventory management	Sales associates Receiving-dock personnel Stock-room personnel Supervisors
Wholesale	Warehouse management Receiving/Putaway/Shipping	Warehouse personnel
Distribution	Returns processing	Loading-dock personnel
Third-party logistics	Warehouse management	Warehouse personnel
Pharmaceutical	Enhanced Traceability	Compliance personnel
Aviation	Parts Tracking Baggage	Maintenance personnel Baggage handling personnel
Defense	Logistics/Supply	Service personnel

HOW DO HANDHELD SOLUTIONS ADD VALUE TO RFID TECHNOLOGY?

Challenge	Solution
Exception Processing	Allows misreads and other problem shipments to be investigated away from the dock without impeding flow
Remote Location Support	Provides a means of utilizing RFID information for receiving
Quick Start	No installation and low total solution cost allows a "quick start" with RFID
On Site Processing	Goods stored away from fixed readers — e.g. in storage racks — can still be processed using RFID tag information
Mixed Bar Code and RFID	Lets workers switch quickly between RFID-tagged items and items marked with a bar code

MC9090-Z RFID SPECIFICATIONS

PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Dimensions:	10.75 in. L x 4.7 in. W x 7.7 in. H 27.3 cm L x 11.9 cm W x 19.5 cm H
Weight:	35.4 oz./1 kg (includes battery, scanner and radio)
Keyboard:	53-key; Terminal Emulation (5250, 3270, VT)
Display:	QVGA color
Power:	Removable, rechargeable 7.2 volt Lithium Ion 2200 mAh battery pack, 15.8 watt hours

PERFORMANCE CHARACTERISTICS

CPU:	Intel® XScale™ Bulverde PXA270 processor at 624 MHz
Operating System:	Microsoft Windows Mobile 5.0 Premium Edition and 6.1 Premium Edition
Memory (RAM/ROM):	64 MB/128 MB
Expansion:	SD/MMC card
Application Development:	PSDK, DCP and SMDK available through Motorola Developer Zone Web site
Bar Code Options:	Omni-directional 1D, 1D ER and 2D imaging engine reads symbologies and captures grayscale images and signatures with intuitive laser aiming.

USER ENVIRONMENT

Operating Temp.:	-4° F to 122° F/-20° C to 50° C
Charging Temp.:	32° F to 104° F/0° C to 40° C
Storage Temp.:	-40° F to 158° F/-40° C to 70° C
Humidity:	5% to 95% non-condensing
Drop Spec.:	Multiple drops to concrete: 6 ft./1.8 m across the operating temperature range
Tumble:	2,000 one-meter tumbles at room temperature (4,000 hits)
Environmental Sealing:	IP64 (electronic enclosure, display and keypad)
Electrostatic Discharge (ESD):	+/-15kVdc air discharge; +/8kVdc direct discharge; +/8kVdc indirect discharge

RFID

Standards supported:	EPC Gen 2 DRM (DRM compliant up to 0.5w)
Nominal read range*:	20 ft. to 40 ft. /6.09 m to 12.1 m
Nominal write range*:	1 ft. to 2 ft./30.5 cm to 60.9 cm
Field:	70-degree cone (approx.) measured from nose of device
Antenna:	Integrated, linearly polarized
Frequency Range:	EU: 865-868 MHz; US: 902-928 MHz
Output Power:	EU: 1.5 Watt ERP; US: 4 Watt EIRP

WIRELESS DATA COMMUNICATIONS

WLAN:	802.11 a/b/g
Output Power:	100 mW U.S. and international
Data Rate:	802.11a: up to 54 Mbps; 802.11b: up to 11 Mbps; 802.11g: up to 54 Mbps
Antenna:	Internal
Frequency Range:	All country dependent: 802.11a - 5 GHz; 802.11b - 2.4 GHz; 802.11g - 2.4 GHz
PAN (Bluetooth Support):	Bluetooth Version 1.2 with BTExplorer (manager) included

PERIPHERALS AND ACCESSORIES

Cradles:	Single-slot serial/USB, 4-slot Ethernet, 4-slot charge only
Printers:	Supports extensive line of Motorola-approved printers and cables
Charger:	4-Slot universal battery charger
Other Accessories:	Cable adapter module; snap-on magnetic stripe reader; modem module; full set of cables

REGULATORY

General:	Approved for use in the US, Canada and Europe**
Electrical Safety:	Certified to UL60950-1, CSA C22.2 No. 60950-1, IEC 60950-1
EMI/RFI Radio Versions:	US: FCC Part 2 (SAR), FCC Part 15, RSS210 Europe: EN 301 893, EN 300 328 EN 60950-1
Laser Safety:	IEC Class2/FDA Class II in accordance with IEC60825-1/EN60825-1, 21CFR1040.10

AVAILABILITY

MC9090-Z:	US, Canada, Europe
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WARRANTY

The MC9090-Z RFID is warranted against defects in workmanship and materials for a period of one year (12 months) from date of shipment, provided the product remains unmodified and is operated under normal and proper conditions.

RECOMMENDED SERVICES

Customer Services: Service from the Start – Bronze with Comprehensive Coverage

*Actual read/write range is dependent upon a number of factors, including the specific tag used, nature of the items tagged, and presence or absence of radio interference.

**NOTE: Model numbers for Regulatory Certification are:
MC9090-Z1: US, Canada
MC9090-Z4: Europe

NOTICE: Repairs of this product may require the use of Motorola proprietary parts (and/or Motorola proprietary information). Motorola will sell these parts (and provide this proprietary information) only to end-user customers for self-service. Applicable in the U.S. For all other countries, please contact your Motorola account manager or the local Motorola Customer Service representative in your area for further details.



**Large QVGA display:
exceptional clarity
and contrast**

Easy to read in a variety of lighting conditions

Forward scanning, pistol grip ergonomics

Reduces user fatigue in bar code scanning and RFID tag reading intensive applications

Integrated directional antenna (70 degree forward-looking)

Enables isolation of desired tags

API (Application Programming Interface) for Microsoft® Windows® CE.NET 4.2 and Windows Mobile 5.0 and 6.1

Familiar tools simplify and reduce the time required to develop RFID-enabled applications

PRODUCT SPEC SHEET
MC9090-Z RFID

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